

### **CLAIMS**

The following listing of claims has not been amended and is simply provided for the convenience of the Examiner.

#### **LISTING OF CLAIMS**

1. (Currently Amended) A communications system comprising:

a stratospheric platform having a payload controller and a phased array antenna having a plurality of elements for generating a first beam and a second beam; and

a gateway station in communication with said stratospheric platform, said gateway station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein,

said gateway station comprising a first subtracting block for subtracting said second signal from said first signal to obtain the first beam; and

said gateway station comprising a second subtracting block for subtracting said first signal from said second signal to obtain the second beam.

2. (Currently Amended) A communications system as recited in claim 1, wherein said gateway station weights said second signal with a first weight prior to subtracting said second signal from said first signal.

3. (Currently Amended) A communications system as recited in claim 1, wherein said gateway station weights said first signal with a second weight prior to subtracting said second signal from said first signal.

4. (Currently Amended) A communications system as recited in claim 1, wherein said first weight is a function of user position files.

5. (Original) A communications system as recited in claim 1, wherein the payload controller comprises a demultiplexer for receiving control signals.

6. (Previously Presented) A communications system as recited in claim 5, wherein the demultiplexer generates a plurality of element control signals.

7. (Previously Presented) A communications system as recited in claim 6, wherein the element control signals are coupled to an RF feed, and the RF feed is coupled to said plurality of elements of said phased array antenna.

8. (Previously Presented) A communications system as recited in claim 1, wherein the gateway station comprises a beam generator for generating beam signals.

9. (Previously Presented) A communications system as recited in claim 1, wherein said gateway station further comprises a multiplexer/demultiplexer.

10. (Previously Presented) A communications system as recited in claim 9, wherein said multiplexer/demultiplexer comprises a code division multiplexer/demultiplexer.

11. (Previously Presented) A communications system as recited in claim 1, wherein said gateway station is coupled to a terrestrial network.

12. (Previously Presented) A system as recited in claim 11, wherein said terrestrial network comprises an Internet.

13. (Previously Presented) A system as recited in claim 11, wherein the terrestrial network comprises a public service telephone network.

14. (Currently Amended) A method of controlling a communications system having a stratospheric platform, said method comprising the steps of:

generating a first beam and a second beam at the stratospheric platform;

receiving a first signal having [a] the first beam having interference from [a] the second beam therein at a gateway station;

receiving a second signal having [a] the second beam having interference from the first beam therein at the gateway station,

subtracting said second signal from said first signal to obtain the first beam at a first subtracting block of the gateway station; and

subtracting said first signal from said second signal to obtain the second beam at a second subtracting block of the gateway station.

15. (Currently Amended) A method as recited in claim 14, ~~further comprising, wherein generating comprises prior to the steps of receiving, generating the first beam and the second beam using a payload controller and a phased array antenna having a plurality of elements prior to the steps of receiving a first signal and receiving a second signal; therefore, and~~ wherein prior to the step of subtracting said second signal from the first signal, weighting the second signal with a first ~~weight, weight,~~ and wherein prior to the step of subtracting said first signal from said second signal, weighting the first signal with a second weight.

16.-24. (Cancelled)

25. (Currently Amended) A communications system comprising:

a stratospheric platform having a payload controller and an antenna having a plurality of elements for generating a first beam and a second beam; and

a gateway station in communication with said stratospheric platform, said gateway station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein,

said gateway station weighing said second signal with a first weight to form a weighted second signal, and thereafter, said gateway station comprising a first subtracting block subtracting said second weighted signal from said first signal to obtain the first beam, wherein said first weight is a function of user position files; and

said gateway station comprising a second subtracting block for subtracting said first signal from said second signal to obtain the second beam.

26. (Currently Amended) A communications system comprising:

a stratospheric platform having a payload controller and an antenna having a plurality of elements for generating a first beam and a second beam; and

a gateway station in communication with said stratospheric platform, said gateway station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein,

said gateway station weighing said second signal with a first weight to form a weighted second signal, and thereafter, said gateway station comprising a first subtracting block subtracting said second weighted signal from said first signal to obtain the first beam; and

said gateway station weighing said first signal with a second weight to form a first weighted signal, said gateway station comprising a second subtracting block for subtracting said first weighted signal from said second signal to obtain the second beam, said first weight and the second weight being a function of user position files.